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WHEN TO PLANT SMALL GRAINS IN CALIFORNIA[1]

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Timely seeding is among the most important good husbandry practices known to the efficient small-grain producers of California. An adjustment in planting date, furthermore, does not appreciably affect the labor or power required to produce a crop on a given acreage, though it can materially affect the yield. In the interest of maximum wartime efficiency in producing grain, accordingly, this leaflet will review the experimental data accumulated at Davis from comparisons of three seeding periods over a term of years. For this purpose the production of several barley, wheat, and oat varieties has been averaged, as shown in table 1. It should be emphasized that these results were obtained on well-drained lands, relatively free from wild oats, canary grass, or mustard.

According to this table, November or December seeding is most productive, especially with wheat; and in most seasons very severe yield reductions result from delaying seeding until February or March. Sometimes, however, early planting is out of the question.

Very often a delay until after the rainy season starts is necessary in order to permit killing a weed crop or improving the seedbed before seeding. The farmer must then wait until rain has germinated the weed seeds in the surface soil so they can be killed by cultivation. Under these circumstances, he should plant as early as practicable, in December or January. Occasionally the use of selective sprays on the growing crop for weed control[4] will prove more economical and wiser than repeated winter tillage for weed control before seeding.

Obviously, farmers operating on soils that are poorly drained or sometimes flooded may have to plant late or else risk having to replant a badly thinned or weedy crop. With these soils, planting often is postponed until after the heavy rains. Where such delay is necessary, one should observe the following precautions: (1) have a firm and weed-free seedbed; (2) drill the seed into moisture, using about one fourth more seed than for earlier sowing; (3) avoid late-maturing varieties; (4) avoid rust-susceptible varieties of wheat and oats. Mariout barley, especially California Mariout, is particularly suited to spring planting on such soils.

TABLE 1

Effect of Date of Seeding on the Average Yields of Barley, Wheat, and Oat Varieties at Davis for the Years Shown

Crop year	Number of varieties grown	Acre yield in bushels from various dates of seeding		
		November or December	January	March
Barley (48 pounds per bushel)				
1928	5	44.6	41.0	21.5
1929	5	36.5	33.6	23.5
1930	5	76.7	88.6	23.4
1939	3	72.2	....	65.9
1941	10	68.3	54.8	....
1942	9	85.3	....	28.9*
Wheat (60 pounds per bushel)				
1928	5	29.4	27.1	6.6
1929	5	28.9	24.7	12.3
1930	5	38.4	35.7	5.8
1938	2	42.9	....	4.0
1939	3	52.5	....	39.3
1941	15	34.1	24.3	....
1942	12	54.2	....	17.7*
Oats (32 pounds per bushel)				
1928	2	42.5	53.0	21.0
1929	2	65.3	65.1	24.0
1930	2	96.7	105.0	16.0
1939	3	86,5	....	45.0
1941	5	53.2	34.0	....
1942	3	102.6	....	27.8*

*Results from seeding February 16, 1942.

[1]Based on cooperative experiments by the Division of Agronomy, University of California, and the Division of Cereal Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

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[4]Described in: Ball, W. S., A. S. Crafts, B. A. Madson, and W. W. Robbins. Weed control. California Agr. Ext. Cir. 97: 1-111. 1940.

Early seeding is desirable in most of the grain-growing regions of California. Seeding in November or December results in a crop that matures earlier and is therefore less liable to suffer from droughts, hot winds, or certain diseases and insects. In planting early, the farmer should observe a few precautions. If he seeds too soon in dry soil, he may encounter early rain, which will germinate the seeds but will not be followed quickly enough by later rains to permit saving of the crop from the intervening dry spell. October or early-November plantings of early-maturing varieties, such as Ramona wheat and Vaughn barley, should be avoided because of possible frost damage at heading time the next spring. In most sections of California, frosts never injure grain except at heading; but at that stage the pollen and other flower parts may be killed by even light frost.

Bunyip wheat is not well adapted to early seeding because it is often attacked by septoria leaf spot, a disease most apt to be serious in premature plantings. Atlas barley runs into the same difficulty, being susceptible to scald and subsequent loss of leaves.

Growers in the northern or mountain counties, where temperatures are severe, must seed as early as possible and yet must avoid frost injury at the heading stage. They must work out their planting dates to suit local conditions, inasmuch as the climate varies greatly outside the larger grain-producing sections.

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